Atty. Docket No. MP0351
Application No: 10/776,476

## Remarks

Applicants and their representatives wish to thank Examiner Jackson for allowing Claims 1, 2, 6-8, 13-19, 22, 23, 25, 29-70, and 73-79, and indicating the allowability of Claim 12. Applicants' undersigned representative also thanks Examiner Jackson for the helpful and courteous discussion on November 27, 2007. New Claims 81-90 have been added. No new matter is introduced by the present Amendment. The following remarks shall further summarize and expand upon topics discussed.

### The Rejection of Claims 3-5, 9-11, 20, 21, 24, 26-28, 71 and 72 under 35 U.S.C. § 103(a)

The rejection of Claims 3-5, 9-11, 20, 21, 24, 26-28, 71 and 72 under 35 U.S.C. § 103(a) as being unpatentable over Goldfarb et al. (U.S. Pat. No. 6,400,227; hereinafter "Goldfarb") in view of Klaren et al. (U.S. Pat. Pub. No. 2004/0095190; hereinafter "Klaren") and Yamaguchi (U.S. Pat. Pub. 6,804,500) is respectfully traversed.

Goldfarb discloses a variable gain radio frequency (RF) amplifier (col. 1, ll. 6-10) that has at least two branches connected in parallel to drive a common output load, and each branch includes at least two FETs in a cascode configuration, wherein a first FET in each branch is arranged to receive an input signal and to amplify the signal in a common source configuration; the second FET is arranged in a common gate configuration with its source receiving the output current of the first FET and the gate of the second FET is coupled to a corresponding gain control input so that the second FET is enabled when the gate receives an enabling gain control signal and disabled otherwise (Abstract, col. 2, ll. 31-67, and FIG. 1).

However, Goldfarb does not at least disclose, teach, or suggest an adjustable stage comprising an adjustable amplifier stage that is configured to provide an output signal in one of a plurality of power ranges corresponding to a number of selected parallel amplifier segments, the output signal having a minimum power efficiency when two or more of said parallel amplifier segments are selected, as recited in Claim 9. In contrast, Goldfarb's disclosure relates to the voltage gain of an RF signal (FIG. 3, and col. 5, ll. 44-61) and is silent with regards to the effects



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and benefits pertaining to output power range and the minimum power efficiency as a result of selecting a particular number of segments in an adjustable stage of the amplifier (see, e.g., Claim 9). Claims 26 and 71 contain similar limitations to Claim 9 and are considered patentable for at least the same reasons.

Furthermore, Goldfarb also appears to be silent with respect to an adjustable stage comprising a first inductor in electrical communication with the control terminal of at least one transistor in the adjustable stage, as the Examiner appears to have noted in the Office Action dated October 1, 2007 (p. 3, ll. 10-12). Coupling a control terminal of a transistor in a stage of the amplifier with an inductor enables class AB amplifier operation (p. 24-25, paragraph [0069]-[0072] of the present specification). By contrast, Goldfarb appears to apply a bias to parallel segments of an amplifier through resistors R3-R6 (FIG. 1). It is known that the resistor biasing configuration R3-R6 of Goldfarb cannot provide class AB amplifier operation. Thus, the inductor-transistor biasing configuration recited in Claim 9 for the adjustable stage enables a function and/or operation that is not possible with the configuration disclosed by Goldfarb.

Thus, Goldfarb is saliently deficient with respect to Claim 9. Goldfarb also appears to be saliently deficient with respect to Claims 26 and 71 for at least similar reasons. The remaining references cited against Claims 9, 26 and 71 do not cure the deficiencies of Goldfarb with regard to Claims 9, 26 and 71.

Klaren discloses a balanced power amplifier circuit arrangement that provides the benefits of bypassing the driver amplifier or balanced amplifier stage in order to conserve power, comprising a driver amplifier stage adapted to receive and amplify a signal (Abstract, ll. 1-3). Klaren does not disclose, teach, or suggest an adjustable stage comprising a plurality of independently selectable parallel amplifier segments. The power amplifiers 38 and 40 of Klaren (p. 4, paragraph [0045] – p. 5, paragraph [0048] and FIG. 1) receive signals from a coupler 26 that splits an RF signal into an in-phase signal and an out-of-phase signal (Abstract and FIG. 1). The RF signal of Klaren does not appear to have independently selectable components (e.g., the in-phase and out-of-phase signals). Accordingly, Klaren cannot cure the deficiencies of Goldfarb with regard to the effects and benefits pertaining to output power range and minimum



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power efficiency as a result of selecting a particular number of segments in an adjustable stage of the amplifier.

Klaren also appears to be silent with respect to each of the selectable parallel amplifier segments having an input at a first common node. The coupler 26 of Klaren (p. 4, paragraph [0041]) is a multiple terminal electronic device and cannot be characterized as an electrical node having an output at a node providing a common input to each of a plurality of independently selectable parallel circuit paths.

Furthermore, Klaren also appears to be silent with respect to independently selectable parallel amplifier segments comprising a transistor having a control terminal and a first inductor in electrical communication with the control terminal. The biasing and control circuit 24 of Klaren biases the amplifiers 38 and 40 (p. 4, paragraph [0045] and FIG. 4a of Klaren), but does not appear to be in electrical communication with of the lumped power splitter/phase shifter and combiner 92-96 and/or inductor 94 of Klaren (p. 6, paragraph [0061] and FIG. 4a). Thus, while it seems possible that biasing and control circuit 24 of Klaren may apply a bias to a control terminal of a transistor in the amplifiers 38 and 40, it is not at all clear that such a transistor is in an independently selectable amplifier stage, nor does it appear possible that any inductor in FIG. 4a of Klaren is in electrical communication with the control terminal to which the bias is applied. As a result, it does not appear possible that Klaren would suggest that coupling an inductor with a control terminal of a transistor in an adjustable stage of an amplifier having a plurality of independently selectable parallel segments would enable class AB amplifier operation.

Thus, Klaren fails to cure the deficiencies of Goldfarb with respect to Claims 9, 26 and 71.

Yamaguchi discloses a high frequency circuit that uses a high output amplifier cell block configured to amplify input signals at a time of high output power in which a DC power source is supplied in parallel to first amplifier cells and a low output amplifier cell block configured to amplify input signals at a time of low output power in which a DC power source is supplied in series to second amplifier cells (Abstract).



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. Yamaguchi does not disclose, teach, or suggest an adjustable stage comprising a plurality of independently selectable parallel amplifier segments, much less where each of the selectable parallel amplifier segments has an input at a first common node receiving a first amplified output from a first fixed stage configured to amplify an analog signal. The bipolar transistors Q1H, Q2H, Q1L, and Q2L of Yamaguchi (col. 11, ll. 34-65 and FIG. 14) are connected in parallel and in series, respectively, and are not independently selectable nor do they have an input at a common node. Thus, Yamaguchi appears to be silent with respect to the effects and benefits pertaining to output power range and the minimum power efficiency as a result of selecting a particular number of segments in an adjustable stage of the amplifier, as recited in Claims 9, 26 and 71.

Furthermore, Yamaguchi also appears to be silent with respect to such an adjustable stage having a control terminal in electrical communication with an inductor. Therefore, Yamaguchi fails to disclose or suggest an inductor-transistor biasing configuration in an adjustable stage of an amplifier that enables a function and/or operation that is not possible with the configuration disclosed by Goldfarb and not suggested by the configuration disclosed by Klaren. Accordingly, Yamaguchi fails to cure the deficiencies of Goldfarb and Klaren with respect to Claims 9, 26 and 71.

No combination of the cited references disclose, teach, or suggest an adjustable stage comprising a first inductor and a plurality of independently selectable parallel amplifier segments, each of the parallel amplifier segments having an input at a first common node, an output at a second common node and a transistor having a control terminal, wherein the first inductor is in electrical communication with the control terminal of at least one of the transistors and the adjustable stage is configured to provide an output signal in one of a plurality of power ranges corresponding to a number of selected parallel amplifier segments, the output signal having a minimum power efficiency when two or more of said parallel amplifier segments are selected, as recited in Claim 9. Claims 26 and 71 are patentable over the cited references for at least similar reasons.



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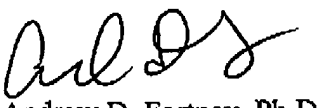
Claims 3-5, 10, and 11 depend directly or indirectly from Claim 9, and are therefore allowable for at least the same reasons as Claim 9. Claims 20, 21, 27, and 28 depend directly or indirectly from Claim 26, and are therefore allowable for at least the same reasons as Claim 26. Claim 72 depends from Claim 71, and is therefore allowable for at least the same reasons as Claim 71. (Applicants' representative notes that Claim 24 depends from allowed Claim 18, and is therefore allowable for at least the same reasons as allowed Claim 18.) As a result, this ground of rejection is unsustainable, and should be withdrawn.

Conclusions

Applicants and their representatives wish to thank Examiner Jackson for allowing Claims 1, 2, 6-8, 13-19, 22, 23, 25, 29-70, and 73-79, and indicating the allowability of Claim 12 over the cited prior art. While certain reasons have been identified as a basis for indicating the allowability of Claims 1, 2, 6-8, 13-19, 22, 23, 25, 29-70, and 73-79, in the present case, Applicants consider the claims as a whole to be allowable. Therefore, Applicants do not necessary agree with the reasons for allowance stated in the Office Action.

In view of the above amendments and remarks, all bases for rejection are overcome, and the application is in condition for allowance. Early notice to that effect is earnestly requested.

Respectfully submitted,



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